

PRELIMINARY AMENDMENT
New U.S. Patent Application

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A circulating fluidized bed reactor comprising a reaction chamber ~~[[1]]~~ connected by an acceleration duct ~~[[4]]~~ to a centrifugal separator ~~[[2]]~~ for separating particles from hot gases coming from said reaction chamber ~~[[1]]~~, ~~characterized in that wherein~~ at least part of the acceleration duct ~~[[4]]~~ is inside the top of the reaction chamber ~~[[1]]~~ and the centrifugal separator ~~[[2]]~~ has substantially straight vertical walls.

2. (Currently Amended) A fluidized bed reactor according to claim 1, ~~characterized in that wherein~~ all of the acceleration duct ~~[[4]]~~ is inside the top of the reaction chamber ~~[[1]]~~.

3. (Currently Amended) A fluidized bed reactor according to claim 1 ~~or claim 2~~, ~~characterized in that wherein~~ the acceleration duct ~~[[4]]~~ has an inlet mouth substantially perpendicular to the extrados of the duct~~[[(4)]]~~.

4. (Currently Amended) A fluidized bed reactor according to claim 1 ~~or claim 2~~, ~~characterized in that wherein~~ the acceleration duct ~~[[4]]~~ has an inlet mouth substantially parallel to the extrados of the duct~~[[(4)]]~~.

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5. (Currently Amended) A fluidized bed reactor according to ~~any preceding~~ claim 1, ~~characterized in that~~ wherein the centrifugal separator [(2)] and the reaction chamber [(1)] have a common wall.

6. (Currently Amended) A fluidized bed reactor according to ~~any preceding~~ claim 1, ~~characterized in that~~ wherein the centrifugal separator [(2)] and the rear cage [(3)] have a common wall.

7. (Currently Amended) A fluidized bed reactor according to claim 5, ~~characterized in that~~ wherein the reaction chamber [(1)] and the rear cage [(3)] have a common wall[(1b)].

8. (Currently Amended) A fluidized bed reactor according to ~~any preceding~~ claim 1, ~~characterized in that~~ wherein the combination of the reaction chamber [(1)], the separator [(2)] and the rear cage [(3)] constitutes a basic module.

9. (Currently Amended) A fluidized bed reactor according to claim 8, ~~characterized in that~~ wherein the reaction chamber [(1)] and the separator [(2)] have aligned exterior walls.

10. (Currently Amended) A fluidized bed reactor according to claim 8 ~~or claim 9~~, ~~characterized in that~~ wherein the power of the reactor is a function of the number of basic modules used.

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11. (Currently Amended) A fluidized bed reactor according to ~~any of claims 8 to 10~~
claim 8, ~~characterized in that~~ wherein two adjacent modules have a common wall.

12. (Currently Amended) A fluidized bed reactor according to claim 11, ~~characterized in~~
~~that~~ wherein the wall common to two modules and between two separators ~~[(2)]~~ is a partial
wall.

13. (Currently Amended) A fluidized bed reactor according to ~~any of claims 8 to 12~~
claim 8, ~~characterized in that~~ wherein the reaction chambers ~~[(1)]~~ of two adjacent modules are
combined.

14. (Currently Amended) A fluidized bed reactor according to ~~any of claims 8 to 13~~
claim 8, ~~characterized in that~~ wherein the rear cages ~~[(3)]~~ of two adjacent modules are
combined.

15. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1~~,
~~characterized in that~~ wherein the interior wall of the reaction chamber ~~[(1)]~~ includes an inlet
deflector ~~[(11)]~~ of the acceleration duct ~~[(4)]~~.

16. (Currently Amended) A fluidized bed reactor according to ~~any of claims 1 to 15~~
claim 1, ~~characterized in that~~ wherein the walls are tubed.

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17. (Currently Amended) A fluidized bed reactor according to claim 16, ~~characterized in that~~ wherein the walls of the acceleration duct [(4)] and the separator [(2)] and the bottom wall and the top wall of the reaction chamber [(1)] are covered with a layer of refractory material.

18. (Currently Amended) A fluidized bed reactor according to claim 16, ~~characterized in that~~ wherein the walls [(40, 41, 42, 43, 44)] of the portion of the acceleration duct [(4)] inside the reaction chamber use tubes [(8)] from the walls of the reaction chamber[(80)].

19. (Currently Amended) A fluidized bed reactor according to claim 16, ~~characterized in that~~ wherein the walls [(40, 41, 42, 43, 44)] of the portion of the acceleration duct [(4)] inside the reaction chamber use tubes [(8)] from the walls of the separator[(2)].

20. (Currently Amended) A fluidized bed reactor according to ~~any preceding~~ claim 1, ~~characterized in that~~ wherein the walls [(40, 41, 42, 43, 44)] of the acceleration duct [(4)] consist of tubes [(8)] forming a separate circuit.

21. (Currently Amended) A fluidized bed reactor according to claim 16 ~~or claim 18~~, ~~characterized in that~~ wherein the walls [(44a)] of the portion of the acceleration duct [(4)]

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between the reaction chamber [(1)] and the separator [(2)] consist of tubes [(80)] from the walls of the reaction chamber and the separator.

22. (Currently Amended) A fluidized bed reactor according to claim 15, ~~characterized in that~~ wherein the deflector [(11, 45)] consists of tubes [(8)] diverted from the walls of the reaction chamber[(1)].

23. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~ characterized in that wherein a deflector is formed by rounding the tubes [(8)] of the floor of the duct [(4)].

24. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~ characterized in that wherein the floor [(40, 42, 43)] of the duct [(4)] is inclined toward the separator[(2)].

25. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~ characterized in that wherein the floor [(40, 42, 43)] of the duct [(4)] is inclined toward the extrados of the duct[(4)].

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26. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the section of the exterior and interior walls ~~[[41]]~~ of the duct
~~[[4]]~~ changes more than once.

27. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the gases are evacuated from the centrifugal separator ~~[[2]]~~ via a
vertical duct ~~[[23]]~~ situated inside said separator ~~[[2]]~~ and which directs the gases toward the
bottom of the separator~~[[(2)]]~~.

28. (Currently Amended) A fluidized bed reactor according to claim 27, ~~characterized in~~
~~that~~ wherein the duct ~~[[23]]~~ is placed in the middle of the separator~~[[(2)]]~~.

29. (Currently Amended) A fluidized bed reactor according to claim 27, ~~characterized in~~
~~that~~ wherein a deflector is placed at the top of the separator~~[[(2)]]~~.

30. (Currently Amended) A fluidized bed reactor according to claim 28, ~~characterized in~~
~~that~~ wherein the deflector has a section at least equal to that of the flue gas evacuation duct
~~[[23]]~~, its position is substantially aligned with that of the evacuation duct ~~[[23]]~~, and its
height is less than that of the constant section portion of the separator~~[[(2)]]~~.

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31. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the separator ~~[(2)]~~ is carried by at least one of the evacuation
ducts ~~[(5, 23)]~~ of the separator~~[(2)]~~.

32. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the rear cage ~~[(3)]~~ is horizontal.

33. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the rear cage ~~[(3)]~~ is situated under the separator~~[(2)]~~.

34. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein the rear cage ~~[(3)]~~ is placed on concrete slabs~~[(9)]~~.

35. (Currently Amended) A fluidized bed reactor according to ~~any preceding claim 1,~~
~~characterized in that~~ wherein a secondary separator is placed between the main separator ~~[(2)]~~
and the rear cage~~[(3)]~~.